

### **REMARKS**

In the outstanding Office Action, the Examiner rejected claims 1-21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,371,373 to Shibata et al. ("Shibata") and U.S. Patent No. 5,348,902 to Shimada et al. ("Shimada") in view of U.S. Patent No. 5,283,440 to Sohda et al. ("Sohda"); and rejected claims 22-34 under 35 U.S.C. § 103(a) as being unpatentable over Shibata and Shimada in view of Sohda and further in view of U.S. Patent No. 6,225,025 to Hoshino ("Hoshino"). By this amendment, Applicants have amended claims 1, 7, and 15. Claims 1-34 remain pending in this application.

Regarding the rejection of claims 1-34 under 35 U.S.C. § 103(a), Applicants respectfully disagree with the Examiner's arguments and conclusions as set forth in the outstanding Office Action<sup>1</sup>. Accordingly, Applicants respectfully traverse this rejection.

To establish a *prima facie* case of obviousness under 35 U.S.C. §103(a), each of three requirements must be met. First, the reference or references, taken alone or combined, must teach or suggest each and every element recited in the claims. See MPEP §2143.03, 8th Ed. (Rev. 2), May, 2004. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references in a manner resulting in the claimed invention. Third, a reasonable expectation of success must

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<sup>1</sup> The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicant declines to automatically subscribe to any statement of characterization in the Office Action.

exist. Moreover, each of the three requirements must “ be found in the prior art, and not be based on applicant’s disclosure. ” See MPEP § 2143, 8th Ed. (Rev. 2), May, 2004. At a minimum, the Examiner has failed to establish a *prima facie* case of obviousness because the references, whether taken alone or in combination, fail to teach or suggest each and every element of the claims.

Claims 1-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata and Shimada, in view of Sohda. Amended claims 1, 7, and 15 recite a combination including “selecting one of the CP apertures for which the logic synthesis is conducted by using only the standard cells on the one of the CP apertures ... which has the highest throughput in delineating one of the patterns of the systems on the substrates.” Shibata, Shimada, and Sohda fail to teach or suggest at least this element, and accordingly that combination of references cannot establish a *prima facie* case of obviousness.

Shibata, for example, teaches:

LSI pattern data is read and input from the LSI-CAD/DA system ... the input data is classified into repetitive patterns based on the cell name and array structure of the input pattern data ... when the input data is classified as the repetitive patterns in step 50, the processing proceeds to step 51, where it is determined whether or not a cell projection condition is satisfied. The cell projection condition 1 is such that the repetitive numbers of the repetitive patterns is sufficiently large and the cell size is not more than the mask size, or the mask has a fabricatable shape.

Shibata, col. 6, line 60 col. 7, line 5. Shibata is silent as to “selecting [a] CP aperture,” as recited in claims 1, 7, and 15, and thus fails to teach or suggest at least the element

“selecting one of the CP apertures for which the logic synthesis is conducted by using only the standard cells on the one of the CP apertures ... which has the highest throughput in delineating one of the patterns of the systems on the substrates,” as recited in claims 1, 7 and 15. Accordingly, Shibata fails to teach or suggest every element of claims 1, 7, and 15.

Shimada fails to cure the above-noted deficiency of Shibata. Shimada teaches a method and procedure for developing a cell library, wherein:

a cell pattern is designed by adding the definition area for connection conductor arrangement conversion ... a cell in a currently-available cell library in a given DA system can be used as it is, to the extent that the definition area for connection conductor arrangement conversion (input/output) portion 3 satisfying *predetermined input/output terminal requirements of another DA system* is designed;

wherein

input/output terminal requirements of the first DA system are, for example, that two polysilicon connecting conductors 27, 27' making up a first level and a second-layer aluminum connecting conductor 18 constituting a third level are used as a conductor for connecting with an external unit of a cell, and the layout pitch (DA pitch) for external connection is set to 3 microns.

Shimada, col. 6, lines 12-30, 58-65 (emphasis added). Shimada is silent to at least

“selecting one of the CP apertures for which the logic synthesis is conducted by using only the standard cells on the one of the CP apertures ... *which has the highest throughput in delineating one of the patterns* of the systems on the substrates,” as recited in claims 1, 7 and 15 (emphasis added). Accordingly, Shimada fails to teach or

suggest each and every element of claims 1, 7, and 15, and also fails to cure the deficiencies of Shibata.

Sohda, cited for allegedly teaching “the use of apertures having shapes of one hundred or more characters having shapes of the standard cells,” also fails to cure the above-noted deficiency of Shibata. Final Office Action, page 8. Sohda teaches “several operations were performed simultaneously with the *selection of the graphic*,” Sohda, col. 7, lines 66-67 (emphasis added), but is silent as to “selecting *one of the CP apertures* for which logic synthesis is conducted,” as recited in claims 1, 7, and 15 (emphasis added). Accordingly, Sohda thus fails to teach or suggest at least the element “selecting one of the CP apertures for which the logic synthesis is conducted by using only the standard cells on the one of the CP apertures ... which has the highest throughput in delineating one of the patterns of the systems on the substrates,” as recited in claims 1, 7 and 15.

Since neither Shibata, Shimada, nor Sohda taken alone or in any reasonable combination, teach or suggest every element recited in claims 1, 7, and 15, those references fail to establish a *prima facie* case of obviousness. Accordingly, Applicants respectfully request that the rejection of claims 1, 7, and 15 under 35 U.S.C. § 103(a) be withdrawn.

Claims 2-6 depend from claim 1. Claims 8-14 depend from claim 7. Claims 16-21 depend from claim 15. Since Shibata and Shimada in view of Sohda fail to teach or suggest every element recited by claim 1, 7, and 15, that combination of references also fails to teach or suggest every element required by the dependent claims.

Accordingly, Applicants respectfully request that the rejection of claims 2-6, 8-14, and 16-21 under 35 U.S.C. § 103(a) be withdrawn.

Claims 22-34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata and Shimada in view of Sohda, and further in view of Hoshino. Claims 22-26 and 34, claims 27-29, and claims 30-33 respectively depend from claims 1, 7, and 15. Claims 22-34 thus require all of the elements recited in those respective independent claims. As discussed above, the combination of Shibata and Shimada in view of Sohda fails to teach or suggest every element recited in claims 1, 7, and 15, and thus also fail to teach or suggest every element required by the dependent claims. Hoshino cited for allegedly teaching the use of shot number analysis to improve throughput of a block exposure process” fails to cure the above-noted deficiencies of Shibata, Shimada, and Hoshino. Final Office Action, page 9.

Hoshino teaches

selecting an appropriate extraction condition according to the layer of exposure ... selecting an appropriate extraction process according to the shape of the block ... selecting an appropriate block extraction process according to the density of the pattern.

Hoshino, col. 14, lines 44-52. Hoshino, however, fails to teach or suggest at least “selecting one of the CP apertures for which the logic synthesis is conducted by using only the standard cells on the one of the CP apertures ... which has the highest throughput in delineating one of the patterns of the systems on the substrates,” as recited in claims 1, 7 and 15, and required by claims 22-34. Since Hoshino fails to cure the above-noted deficiencies of Shibata, Shimada, and Sohda, the combination of

references fails to establish a *prima facie* case of obviousness. Accordingly, Applicants respectfully request that the rejection of claims 22-34 under 35 U.S.C. § 103(a) be withdrawn.


In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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